REMARKS

Claims 80, 82, 84-86 and 89 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. 5,226,177 ("Nickerson"). Claim 80 has been amended to more particularly define the claimed associative mapping. In accordance with claim 80 as amended, the associative mapping is stored as a table such that the associative mapping can be accessed by the content of selected rows or columns of variables determined by the response signal. Claim 80 has been further amended because of the Examiner's expansive interpretation of a "time slice as encompassing a time code." Thus, instead of "digitally stored time slices", claim 80 now recites "a storage device upon which video frames of the stimulus signal corresponding to the time slices and the associative mapping are digitally stored." As conceded by the examiner, Nickerson does not teach storing the stimulus stream as a digital signal. Rather, Nickerson stores the stream on a video tape. The advantages of using digital storage for the stimulus stream are explained in Applicants' previous response and were accepted by the Examiner. Thus, for these reasons, claims 80 and all claims depending therefrom are patentable over Nickerson.

Claims 70, 71, 73, 74, 79, 81, 83, 92-95, 97 and 103-105 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nickerson in view of U.S. 5,517,251 ("Rector"). Claims 81, 83, 92-95 and 97 all depend from claim 80. As discussed above, claim 80 requires digital storage of video frames of the stimulus signal. Given that Nickerson stores the signal on a video tape, the Examiner turns to Rector for this claim element.

Claim 80 has been amended to specify that the storage device has "an organized structure for storing the associative mapping as a table such that the associative mapping can be searched by the content of selected rows or columns of variables to retrieve video frames of the stimulus signal responsive to the search." Mapping to a table has tremendous computational advantages. In accordance with the attached Declaration of Dr. Terry Potter, he notes that with a table it becomes a simple matter to add columns or rows at any time. Most importantly, as claimed, searches can be conducted through the table on the basis of the content of any number of the selected rows or columns in the

mapping. The relevant portions of the stimulus signal may thus be retrieved from digital storage in response to the search.

The use of associative mapping stored in a table is entirely distinct from the IFFPHYS data format taught for use with the physiological data of Rector. Rector teaches "a system that mixes analog signals with the video signals whereby the analog signals are contained on at least some of the horizontal lines of the video frame." (Abstract). Rector notes, "The interleaved data can be stored on conventional video tape." (Col. 2, l. 43-44). Rector further explains, "Since the video and analog data are mixed before digitization, the procedure reduces the overall complexity of the acquisition process." (Col. 2, l. 56-58). Mixing in a multiplexor is described in column 3, line 63-67. Digitizing the mixed signal is described as follows by Rector, "The output of the mixer 17 is fed into the video digitizer 18, which samples video and physiological data simultaneously. Alternatively and/or additionally the output of the mixer 17 can be directed to a conventional video recorder 19. The video digitizer feeds a host computer 20 for signal analysis as required." (Col. 4, l. 52-57). Hence, Rector makes clear that the physiological response is mixed in or interleaved with the video stimulus signal.

An article by David Rector describing the use of IFFPHYS File Format is attached to the Potter Declaration as Exhibit A. Rector's article describes IFFPHYS as a flat file, one which is read in series, as a series of blocks each preceded by a descriptive header. Indeed, the format is designed for use in "Continuous Image and Electrophysiological Recording" as it appears in the title of the article. Rector's article at page 157 under "Archive Media" describes sending one high performance stream to archive media for reliable storage and another stream to computer processes for display and analysis. The archive media is described typically as either tape media or RAID tape arrays or fast hard drives. While this continuous file format can be analyzed by a computer which may read through the entire file, it is not by any means a table relating time slices of a stimulus signal with responsive signals as a function of time. Rather, Rector discloses one continuous file in which the stimulus signal is mixed with the physiological data taken contemporaneously with the video. There is no method described or contemplated for adding new response variables at a later time to the stored data. Having mixed the response physiological data with the video signal, adding further

data at a later time is not made possible by the IFFPHYS file format. Moreover, searching the file for particular values of variables require reading through the combined video and data signal. Thus, Rector fails to disclose or suggest the associative mapping stored as a table such that the associative mapping can be searched by the content of selective rows or columns of variables to retrieve responsive video frames. Thus, neither Nickerson nor Rector disclose or suggest digitally stored video frames that can be retrieved through an associative mapping stored as a table. As such, claim 80 and all claims depending therefrom should be allowed.

Claim 70 has been amended to more specifically recite the multi-channel associative mapping embodiment. In accordance with amended claim 70, a plurality of video stimulus streams are analyzed. One example given in the present application involves two audiences viewing a performance at different angles and thus experiencing a different visual stimulus, each visual stimulus signal being recorded in a video stimulus stream. In accordance with the invention of claim 70, a multi-channel associative mapping is generated by the correlator relating the responses to time slices in the plurality of video stimulus streams. Such a multi-channel associative mapping is neither taught nor suggested by Nickerson or Rector. Nickerson fails to disclose digitally processing each stimulus stream as a digital signal with a series of time slices. Rather, Nickerson merely discloses maintaining a video signal in a video tape. Nickerson attempts to synchronize the response data with the SMPTE time codes of the video tape. To further synchronize with SMPTE time codes of a second or additional or further video signals adds serious complications that would deter those of ordinary skill in the art from going in the direction of attempting to make a mapping to more than one video stream.

Rector discloses interleaving physical response data with a video stream into the IFFPHYS format, without any accommodations for multiple video signals. Rector creates an interleaved video file. Data can be inserted into the vertical blanking interval and other available space on the video signal. Only one video is contemplated and there is no teaching for how more than one video can be combined into the IFFPHYS file. (Potter Declaration, paragraph 7)

The invention of claim 70 is a departure from these prior art systems. A multi-channel associative mapping can be created such that time slices of the one or more

stimulus streams may be retrieved and played back. In accordance with one embodiment of the present invention, the mapping is created in the form of a table so that additional columns or rows may be added and thereby additional video streams may be mapped. Therefore, the apparatus for analyzing responses to a plurality of video stimulus streams of claim 70 storing a multichannel associative mapping is patentable over the art of record. Thus, claim 70 and all claims depending therefrom should be allowed.

Claim 97 has been amended to include generating a summary video. The summary video of claim 97 is a series of video segments that are non-contiguous in the at least one stimulus stream. The time slices are selected in response to search criteria. This feature of applicant's invention is described on page 8, lines 1-6 (paragraph [0037]) which reads as follows:

> In this embodiment a summary video can be made where segments of the video information can be parsed based on interesting statistical correlations among the audience members thereby creating a summary video having only segments which are of interests to the presenter 14. For example, for basic highlights or lowlights, the analysis can simply look for somewhat uniform highs and lows in the responses and transmit video segments common to those responses.

Given that the summary video is created by picking out segments responsive to the search resulting summary video, it will often and typically be comprised of video segments that are non-contiguous. The video signal of Nickerson is on a video tape and thus there is no method described in Nickerson for being able to extract portions of the video to create a summary video as taught by Applicant and claimed in claim 97. Likewise, Rector lacks any discussion of producing a summary video of non-contiguous video segments selected by search criteria. While a search through the IFFPHYS file can be conducted to locate a certain segment, there is no discussion or suggestion of an ability to create a summary video of non-contiguous video segments responsive to search criteria. Therefore, claim 97 now fully distinguishes over the art of record. Claim 97 and all claims depending therefrom should be allowed.

Claims 72 and 96 were rejected under 35 U.S.C. §103(a) over Nickerson in view of Rector and Cobbley. Claims 72 and 96 have been cancelled making this rejection now moot.

Claim 90 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Nickerson in view of the provided definition of "interpolation." Claim 90 depends from claims 80 and 89 and should be allowed for the reasons recited above with respect to claim 80.

Claim 91 was rejected under 35 U.S.C. §103(a) as being unpatentable over Nickerson in view of the provided definition of "extrapolate." Claim 91 depends from claims 80 and 89 and should be allowed for the reasons recited above with respect to claim 80.

Claims 98-100 were rejected under 35 U.S.C. §103(a) as being unpatentable over Nickerson in view of Rector and Leroy. Nickerson and Rector are discussed above with respect to claim 97. Leroy also fails to disclose, suggest or teach generation of a summary video. For these reasons, claims 98-100 should be allowed.

Claims 101 and 102 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nickerson in view of Rector, Leroy and Cobbley. Cobbley fails to satisfy the deficiencies of Nickerson, Rector and Leroy as discussed above with respect to claim 97. Rather than correlating stimulus stream with responses, Cobbley is directed to indexing a stimulus stream based on the content of the stimulus stream. Cobbley discusses indexing based on time, topics, guests, content, etc. The teachings of Cobbley are unrelated to methods for analyzing the responses that are associated with an at least one stimulus stream to store an associative mapping and a subsequent searching of that mapping. The Examiner cites Cobbley for teaching an apparatus for selectively playing back segments of a video by selecting indexed information associated with the segments. With respect to claim 97 as amended, Cobbley fails to satisfy the deficiencies of Nickerson, Rector and Leroy. Therefore, claims 101 and 102 should be allowed for the same reasons as for amended claim 97.

For all the foregoing reasons, Applicants submit that all of the claims presently pending in the application are allowable over the art of record and early notice to that effect is respectfully solicited.

Respectfully submitted,

Dated: March 24, 2010

/Robert M. Asher, #30,445/
Robert M. Asher
Registration No. 30,445
Attorney for the Applicants
Sunstein Kann Murphy & Timbers LLP
125 Summer Street
Boston, MA 02110
(617) 443-9292

02221/00103 1230874.1